

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

⑥ **BLACK BORDERS**

- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

450

Int. Cl.²: A 61 K 9/06

Federal Republic of Germany

Patent Document 25 21 003

File reference:
Application Date:
Disclosure Date:

Date open to public inspection: P 25 21 003.1-41
May 12, 1975

August 12, 1976

Union Priority:

Description:

Application:

Inventor: Cream, ointment, or the like

Philipp Shaefer
3000 Hannover

Philipp Shaefer
Carsten Picker
3000 Hannover

Documents considered for the assessment of the patentability:
None determined

Patent Claim:

Cream, ointment, paste having medically and/or cosmetically active substances, with cleansing and/or protective properties, characterized in that the creme is liquid, like a paste, or like wax, and consists, at least in part, of hollow microdrops which have a thin shell made of a thermoplastic material, and that these microdrops have different diameters.

The invention involves a cream having a low density, specifically a cream, ointment, paste or the like, having medically and/or cosmetically active substances, with cleansing and/or protective properties.

A cream or the like, as is used, for example, for cleaning and care of the teeth and gums, as well as for the protection of the skin and for the healing of wounds, as well as for treating allergies, and furthermore, as facial masks, for the removal of body hair and calluses, and for shaving, is generally a tixotropic substance having a high density, which is liquid to semi-solid or paste-like at room temperature. Physically, these substances are called dispersions, emulsions, pastes, oils, gels, solutions or mixtures of the cream or the like. For the most part, they contain medically and/or cosmetically active substances, along with other substances, for every area of application.

The lathering up of a cream or the like is known. To do this, a foaming agent is used, which foams up the cream when it leaves the pressure container, by expanding (vaporization).

It is also known to mechanically foam a cream or the like together with emulsifying agents and foam stabilizers using a high-speed mixer.

Furthermore, it is known to foam a cream or the like directly on the skin (shaving cream).

In all cases, the foamed cream or the like is extremely unstable and sensitive. The foam collapses after a short time by releasing moisture to the skin and/or the atmosphere or spontaneously under pressure. The foam is especially unstable when heated and when the air is moving and under moving water. The desired effect of insulating, protecting, and healing by a foamed creme, or the like, this effect also acting for storing an active substance, is thus only incompletely achieved. Moreover, the cream, especially if it is applied in a thicker coat, does not actively breathe and prevents the skin from breathing.

A further disadvantage consists in that the mostly low-molecular substances needed to generate the foam and added into the cream or the like, such as, for example, the foaming agent, the emulsifying agents and the foam stabilizers, are not compatible with many medically and/or cosmetically active substances, or they react with them and reduce their effectiveness, or increase their effectiveness in an undesired manner.

A disadvantage also consists in that, in particular, foaming agents and emulsifying agents are not physiologically neutral and act in an especially unpleasant way on the mucous membrane, and often cause allergies.

A considerable disadvantage of each cream or the like consists in that its viscosity depends to a large degree on the temperature of the cream, of the air and of the body, which makes a uniform distribution difficult or impossible.

The viscosities of all creams, or the like, especially those based on a fatty cream/ointment base, which have a relatively low density, are very different, from liquid to wax-like, in the usage range from -25 °C (UV-protection cream for winter sports) to +25 °C (UV-protection cream for swimming on vacation).

The purpose of the invention is to eliminate this disadvantage and to create a cream which has a low density and maintains the approximate original viscosity over a wide temperature range. In a foam-like consistency, it gives off no or hardly any moisture into the atmosphere, and it does not collapse in this foam-like state under pressure and/or heat. It can be easily and uniformly spread, has insulating and breathing properties, is physiologically neutral and acts neutrally towards the active substances. Furthermore, the purpose of the invention is to economize on expensive active substances and expensive ointment bases.

The purpose of the invention is achieved according to the invention in the distinguishing features of the characteristics of the claim and reads: cream, ointment, paste having medically and/or cosmetically active substances, with cleansing and/or protective properties, characterized in that the creme is liquid, like a paste, or like wax, and consists, at least in part, of hollow microdrops which have a thin shell made of a thermoplastic material, and that these microdrops have different diameters.

In an especially preferred manner, the hollow microdrops are completely surrounded by the liquid or paste-like substance, i.e. are embedded in it. According to the invention, the hollow microdrops have a smooth surface and are applied in variable sizes, i.e. having different diameters. In an advantageous manner, the closed elastic shells of the hollow microdrops consist of polyvinylidene chloride copolymeride.

Understood here to be hollow microdrops are also hollow microspheres having thin shells made of a thermoplastic material, and which are hollow on the inside, or contain a gas in their center which is preferably air. The hollow microdrops being used have, as already mentioned, varying diameters, and specifically, 0.005 to 0.65 mm, preferably from 0.01 to 0.09 mm.

A description of these hollow microdrops is found in the US patent 36 15 972 and in the magazine "Modern Plastics" 1969, August, p. 55.

For bonding, or for embedding the micropearls, all known so-called "ointment bases" are suitable, especially vegetable and animal fats and oils, stearin, suint, fatty alcohol, lanolin, wax, mineral oils, vaseline, gelatin, glycerin, low alcohols, solvents, etc.

According to the invention, the cream, or the like, consists of 5 to 96% by volume, preferably at 18 to 72%, of hollow microdrops.

The creme according to the invention, or the like, has a density of from 0.05 to 0.91, preferably from 0.16 to 0.48, and has a foam-type consistency.

It can be applied in an especially easy manner to the skin, and spread uniformly over it, at all temperatures.

The foam-type consistency of the cream according to the invention is not disturbed by pressure, heat, moving air, nor by moving water.

The cream or the like actively breathes and does not disturb or hardly disturbs the skin's breathing in layers below 1 mm. It is therefore especially suitable, with the corresponding active substances, as a cream for facial masks and as an ointment for burn injuries.

As a consequence of the air which is encapsulated in the hollow microdrops, which also can not escape under pressure, the cream according to the invention has excellent cold and heat insulating properties. It is therefore especially suitable as a protection cream against cold water, as it is used by swimmers and divers.

The preferably used high-polymer microdrops made of polyvinylidene chloride copolymeride are non-combustible. In combination with non-combustible liquid and pasty substances, such as, for example, chloroparaffin, they are especially suitable as protection creams for fire catastrophes, for operations on blast furnaces, etc.

A further advantage of the invention consists in that the hollow microdrops themselves act in a completely physiologically harmless manner relative to the human or animal body and the active substances.

⑤

Int. Cl. 2:

A 61 K 9/06

⑱ BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES



PATENTAMT

DT 25 21 003 B1

⑪

Auslegeschrift 25 21 003

⑫

Aktenzeichen: P 25 21 003.1-41

⑬

Anmeldetag: 12. 5. 75

⑭

Offenlegungstag: —

⑮

Bekanntmachungstag: 12. 8. 76

③

Unionspriorität:

③② ③③ ③① —

⑤④

Bezeichnung: Creme, Salbe o.dgl.

⑦①

Anmelder: Schaefer, Philipp, 3000 Hannover

⑦②

Erfinder: Schaefer, Philipp; Picker, Carsten, 3000 Hannover

⑤⑥

Für die Beurteilung der Patentfähigkeit in Betracht gezogene Druckschriften:

Nichts ermittelt

Zum Verbinden, bzw. zum Einbetten der Mikrohohlperlen eignen sich alle bekannten sogenannten »Salbengrundlagen«, insbesondere pflanzliche und tierische Fette und Öle; Stearin, Wollfett, Fettalkohole, Lanolin, Wachse, mineralische Öle, Vaseline, Gelatine, Glycerin, niedrige Alkohole, Lösungsmittel usw.

Erfindungsgemäß besteht die Creme od. dgl. volumenmäßig zu 5 bis 96%, vorzugsweise zu 18 bis 72%, aus Mikrohohlperlen.

Die erfindungsgemäße Creme od. dgl. hat eine Dichte von 0,05 bis 0,91, vorzugsweise von 0,16 bis 0,48, und besitzt eine schaumartige Konsistenz.

Sie läßt sich bei allen Temperaturen besonders leicht auf die Haut auftragen und gleichmäßig auf ihr verteilen.

Die schaumartige Konsistenz der erfindungsgemäßen Creme wird durch Druck, Wärme, bewegte Luft, sowie durch bewegtes Wasser nicht zerstört.

Die Creme od. dgl. ist atmungsaktiv und stört in Schichten unter 1 mm die Hautatmung nicht oder

kaum. Sie ist deshalb mit entsprechenden Wirksubstanzen als Creme für Gesichtsmasken und als Salbe bei Brandverletzungen besonders gut geeignet.

In Folge der in den Mikrohohlperlen eingekapselten Luft, die auch unter Druck nicht entweichen kann, besitzt die erfindungsgemäße Creme ausgezeichnete kälte- und wärmeisolierende Eigenschaften. Sie ist deshalb als Schutzcreme gegen kaltes Wasser, wie sie von Schwimmern und Tauchern verwendet wird, besonders geeignet.

Die vorzugsweise verwendeten hochpolymeren Mikrohohlperlen aus Polyvinylidenchlorid-Copolymerisat sind unbrennbar. In Verbindung mit unbrennbaren flüssigen oder pastösen Substanzen, wie z. B. Chlorparaffin, sind sie besonders geeignet als Schutzcreme bei Brandkatastrophen, bei Arbeiten an Hochöfen usw.

Ein weiterer Vorteil der Erfindung besteht darin, daß sich die Mikrohohlperlen als solche physiologisch absolut unbedenklich gegenüber dem menschlichen bzw. tierischen Körper und den Wirksubstanzen verhalten.